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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,468	12/31/2003	Enrique M. Stiles	STEP004	9869

34496 7590 02/21/2007

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EXAMINER	
ENSEY, BRIAN	
ART UNIT	**PAPER NUMBER**
2615	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/750,468	STILES, ENRIQUE M.	
	Examiner	Art Unit	
	Brian Ensey	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) *3,7,9,14-18,23-36,38,40 and 42* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5,6,8,10-13,19-22,37,39,41* is/are rejected.

7)☒ Claim(s) *4 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Species 15, Figure 8 claims 1, 2, 4-6, 8, 10-13, 19-22, 37, 39 and 41 in the reply filed on 12/19/06 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 6, 10, 12, 13, 37, 39 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamuro U.S. Patent No. 3,922,501.

Regarding claim 1, Yamamuro discloses an audio speaker comprising: a motor assembly including, a magnet (3), a first magnetically conductive member magnetically coupled to the magnet (top plate 4), the first magnetically conductive member comprising a plurality of laminated layer sections which are magnetically coupled to but electrically insulated from each other (9 - magnetic, 10 - insulated), and a second magnetically conductive member magnetically coupled to the magnet (center pole 2), a magnetic air gap (between top plate and center pole) between the first and second magnetically conductive members; and a diaphragm assembly(inherent in an electro-acoustic converter having a magnetic circuit with an air gap and voice coil) coupled to the motor assembly and including a voice coil (6) disposed within the magnetic air gap (See Fig. 7, col. 1, lines 16-57 and col. 3, lines 17-24).

Regarding claim 2, Yamamuro further discloses each of the laminated layer sections has a substantially uniform thickness (See Fig. 7).

Regarding claim 5, Yamamuro discloses an audio speaker comprising: a diaphragm (inherent in an electro-acoustic converter having a magnetic circuit with an air gap and voice coil) assembly including a voice coil (6); and a motor assembly including, a first magnetically conductive member (center pole 2), a first laminated structure in which a plurality of magnetically conductive sections are mechanically coupled together and electrically insulated from each other to prevent eddy currents (9 - magnetic, 10 - insulated) which would otherwise be induced by an electrical current applied to the voice coil, and a magnet (3) magnetically coupled between the first magnetically conductive member and the laminated structure, wherein the first magnetically conductive member and the laminated structure define between them a magnetic air gap (between top plate and center pole) within which the voice coil is disposed (See Fig. 7, col. 1, lines 16-57 and col. 3, lines 17-24).

Regarding claim 6, Yamamuro further discloses the first laminated structure comprises a top plate (4) (See Fig. 7).

Regarding claim 10, Yamamuro discloses an improvement in a electromagnetic motor structure which includes a magnetically conductive yoke (center pole 2), a magnetically conductive top plate (4) defining a magnetic air gap with the yoke, and a permanent magnet (3) magnetically coupled between the yoke and the plate, wherein the improvement comprises: at least one of the yoke and the top plate being comprised of multiple components laminated together so as to be electrically insulated from each other (9 - magnetic, 10 - insulated); whereby the at least one of the yoke and the plate which is laminated has a significantly reduced

susceptibility to eddy currents being induced therein by a varying magnetic flux field from a voice coil in the magnetic air gap (See Fig. 7, col. 1, lines 16-57 and col. 3, lines 17-24).

Regarding claim 12, Yamamuro further discloses both the yoke and the plate being so laminated (See Fig. 7).

Regarding claim 13, Yamamuro further discloses the yoke comprising one of a cup, a pole plate(2), and a tube.

Regarding claim 37, Yamamuro further discloses the second magnetically conductive member comprises a plurality of laminated layer sections (9 - magnetic, 10 - insulated) which are magnetically coupled to but electrically insulated from each other (See Fig. 7).

Regarding claim 39, Yamamuro further discloses the first magnetically conductive member comprises a second laminated structure (9 - magnetic, 10 - insulated) in which a plurality of magnetically conductive sections are mechanically coupled together and electrically insulated from each other to prevent eddy currents which would otherwise be induced by the electrical current applied to the voice coil (See Fig. 7, col. 1, lines 16-57 and col. 3, lines 17-24).

Regarding claim 41, Yamamuro discloses a method of operating an audio speaker to move a diaphragm in response to an alternating current electrical signal applied to the speaker, the method comprising: conducting magnetic flux from a magnet (3), thence through a first magnetically conductive member (4), over a magnetic air gap, thence through a second magnetically conductive member (7,2,1 – yoke with center pole piece), and thence back to the magnet (inherent flux path in a magnetic circuit as shown in Figs. 6 and 7); conducting the electrical signal through a voice coil (6) which is disposed within the magnetic air gap and wound around a bobbin (5) which is coupled to the diaphragm; in response to the electrical

signal being conducted through the voice coil, moving the voice coil under electromotive force in response to the presence of the magnetic flux across the magnetic air gap (inherent in an electroacoustic converter with a magnetic circuit and voice coil wound on a bobbin and attached to a diaphragm); and substantially preventing eddy current in at least one of the first and second magnetically conductive members, by virtue of the at least one of the first and second magnetically conductive members comprising a laminated structure of electrically insulated magnetically conductive sections, which eddy current would otherwise be induced by the electrical signal being conducted through the voice coil (See Fig. 7, col. 1, lines 16-57 and col. 3, lines 17-24).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8 and 19-22 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamuro as applied to claims 1 and 5 above, and further in view of Zuerker et al. U.S. Patent No. 2,894,182.

Regarding claims 8 and 19-22, Yamamuro discloses an audio speaker as claimed. Yamamuro does not expressly disclose the first laminated structure comprises an internal magnet, a top plate, and a cup yoke wherein a top plate which is comprised of a plurality laminated layer sections which are magnetically coupled to but electrically insulated from each

other. However, the use of internal magnet geometry transducers with internal magnets, top plates and cup yokes is well known in the art and Zuerker teaches an internal magnet geometry transducer (Figs. 1 and 2) with an internal magnet (9), a top plate (10) and a cup yoke (11). The use of an internal or external magnet geometry is merely a function of intended use. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the external geometry of Yamamuro with the internal geometry of Zuerker and provide the same laminated structure as taught by Yamamuro for reducing eddy current power loss (See Yamamuro col. 3, lines 17-24).

Allowable Subject Matter

Claims 4 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, Va. 22313-1450

Or faxed to:

(571) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand-delivered responses should be brought to:

Customer Service Window
Randolph Building
401 Dulany Street
Arlington, VA 22314

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian Ensey
Examiner
February 16, 2007